

**REMARKS**

Upon entry of the amendment, claims 1, 2 and 5-33 will be all the claims pending in the application.

Claims 1 and 2 have been amended to recite "in the same molecule" and "wherein the molar ratio of the terminal group represented by formula (1) to the repeating unit represented by formula (2) is from 0.2 to 2," and support for the amendments can be found, for example, at page 5, lines 12-17 and page 14, lines 10-17 of the present specification.

New claims 31-33 have been added. Claim 31 is directed to a fumarate where the terminal group is represented by formula (4) where  $R^4$  is a methyl group; claim 32 is directed to a fumarate where the terminal group is represented by formula (3) where  $R^2$  and  $R^3$  are hydrogen atoms or by formula (4) where  $R^4$  is a methyl group; and claim 33 is directed to a polymerizable composition comprising the fumarate of claims 13 and 14. Further support for the new claims can be found, for example, in claim 5 and at pages 11-12 and 46 of the present specification.

Applicants submit that the amendments raise no new issues, and entry of the above amendments is respectfully requested.

Initially, Applicants thank the Examiner for indicating that claims 13 and 14 are allowed. In view of the allowance of claims 13 and 14, it is respectfully submitted that new claim 33 should be allowed since new claim 33 depends from claim 13 or 14.

**I. Response to Rejection of Claims 1, 2, 5-6, 26, 28 and 29 under 35 U.S.C. § 103(a)**

At pages 2-3 of the Office Action, claims 1, 2, 5, 6, 26, 28 and 29 have been rejected

under 35 U.S.C. §103(a) as allegedly being unpatentable over Friedlander.

Applicants traverse the rejection and submit that Friedlander does not teach or suggest the present invention.

Friedlander discloses a liquid, radiation curable coating composition comprising an unsaturated polyester having a plurality of maleate and/or fumarate groups, and a non-polymerized, co-curable vinyl ether component free radically reactive with said unsaturation of said polyester and selected from the group consisting of (a) vinyl ester compounds containing an average of at least two reactive vinyl ether groups per molecule and (b) a vinyl ether containing group bonded to the polyester. The compound (b) of Friedlander is a vinyl ether containing group structurally incorporated in the unsaturated polyester via two urethane bonds by using an organic diisocyanate compound. *See* col. 4, lines 1-15 and lines 37-40 and Example 8.

With respect to a composition comprising a vinyl ether component and a unsaturated polyester component, Friedlander teaches that the molar ratio of carbon-carbon double bond equivalents from the vinyl ether component to carbon-carbon double bond equivalents from the unsaturated polyester component for most coating purposes preferably does not exceed 1, since the low molecular weight vinyl ether may tend to undesirably plasticize the resulting film. *See* col. 3, lines 43-52. However, Friedlander is silent with respect to the molar ratio concerning the compound having alkenyl ether group bonded directly to the unsaturated polyester or polyester polyether of the present invention. That is, Friedlander does not teach or suggest that the molar ratio of the terminal alkenyl ether group represented by formula (1) to the repeating unit represented by formula (2) is from 0.2 to 2.

Therefore, Friedlander does not teach or suggest a compound of the present invention according to claims 1 and 2, where at least one alkenyl ether group represented by formula (1) is bonded directly to the unsaturated polyester or polyester polyether as represented by formula (2) or formulae (2) and (5), and having a molar ratio of the terminal alkenyl ether group represented by formula (1) to the repeating fumarate unit represented by formula (2) of from 0.2 to 2.

Further, Friedlander is silent with respect to the unexpectedly superior results obtained by the heat cured product of the present invention. The present invention provides unexpectedly superior curing properties, such as hardness. *See* Table 6 on pages 81-82 of the present specification.

Finally, Friedlander is silent with respect to an alkenyl ether group other than the vinyl ether group as a terminal group.

For the above reasons, it is respectfully submitted that Friedlander does not teach or suggest the present invention according to claims 1 or 2, and that one of ordinary skill in the art would not arrive at the present invention based on the disclosure of Friedlander.

Further, each of claims 5, 6, 26, 28 and 29 depend, directly or indirectly, from claim 1 or 2. Therefore, it is submitted that these claims are patentable over the cited art for at least the same reasons as claims 1 and 2.

In view of the above, withdrawal of the rejection is respectfully requested.

## **II. Withdrawn Claims**

It is respectfully submitted that claims 7-9, 12 and 26-30 depend, directly or indirectly, from claims 1 and 2. If claims 1 and 2 are found to be patentable over the cited art, it is

respectfully requested that these claims be allowed since they contain all the limitations of claims 1 and/or 2.

In addition, withdrawn claims 16-21 are directed to manufacturing the fumarate compound as claimed in claims 1, 2 and 5-6 and withdrawn claims 7-9 and 12. If the product claims are allowable, then Applicants respectfully request rejoinder of the withdrawn method claims, which include all of limitations of the corresponding product claims pursuant to MPEP § 821.04.

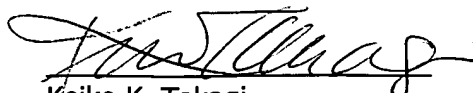
**III. Conclusion**

In conclusion, reconsideration and withdrawal of the §103 rejection, and allowance of the claims are respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
Keiko K. Takagi  
Registration No. 47,121

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: January 26, 2005